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Anderson

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(54) **METHODS AND APPARATUS TO REDUCE FORMATION OF STREAKS ON A WALL**

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B63B 17/00 (2006.01)

(52) **U.S. Cl.** **114/343**; 114/361

(58) **Field of Classification Search** ..... 114/343, 114/361, 364, 218, 182, 183 R, 219, 382; 296/95.1; 52/58–62, 302.6
See application file for complete search history.

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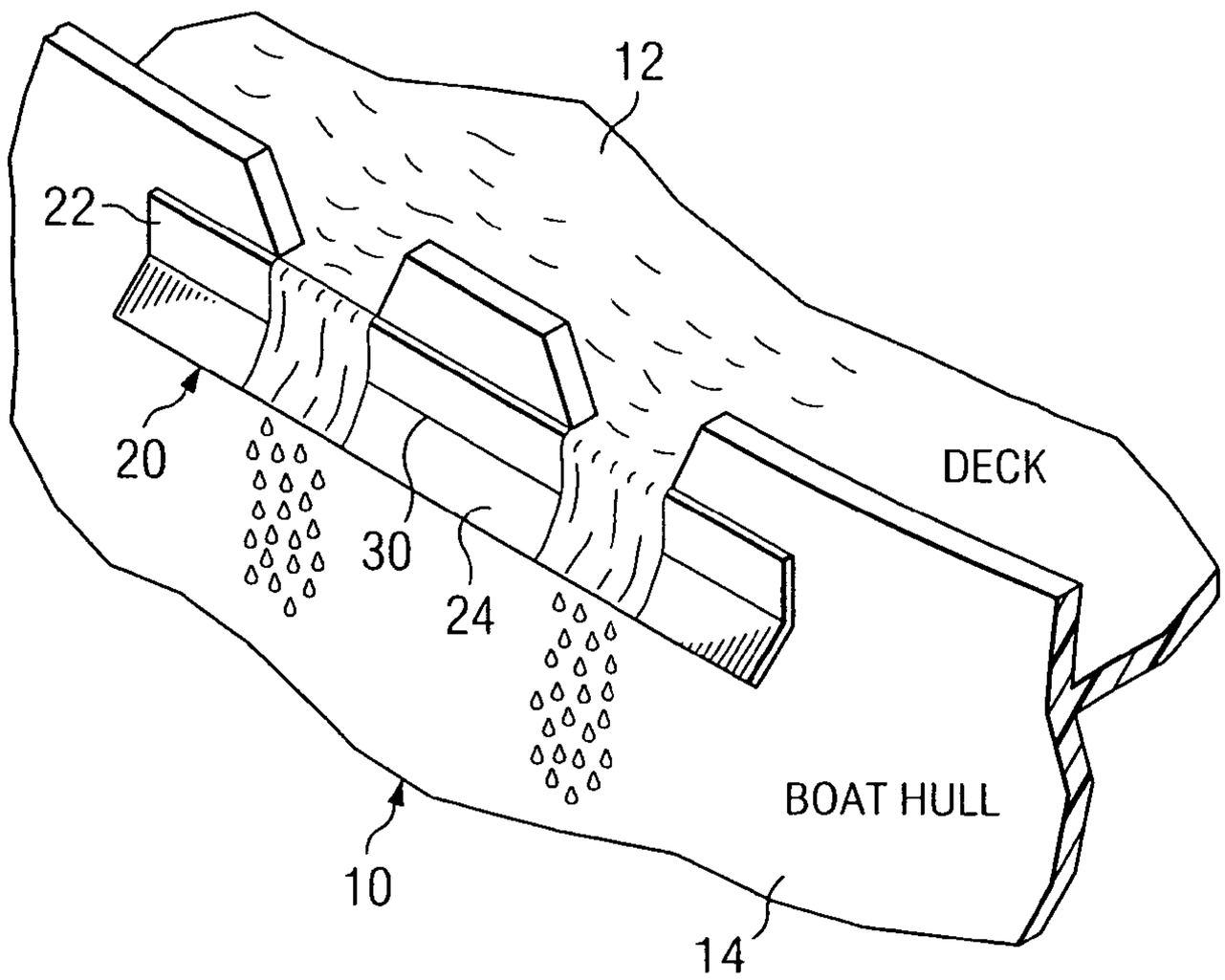
(57) **ABSTRACT**

Methods and apparatus to reduce formation of streaks from fluid running down a side surface of boat hull are disclosed. A disclosed method includes adhering a first portion of a flexible strip to the side surface of the hull, and employing a second portion of the flexible strip positioned at an obtuse angle to the first portion to deflect fluid running down the hull surface above the flexible strip away from the hull.

7 Claims, 2 Drawing Sheets



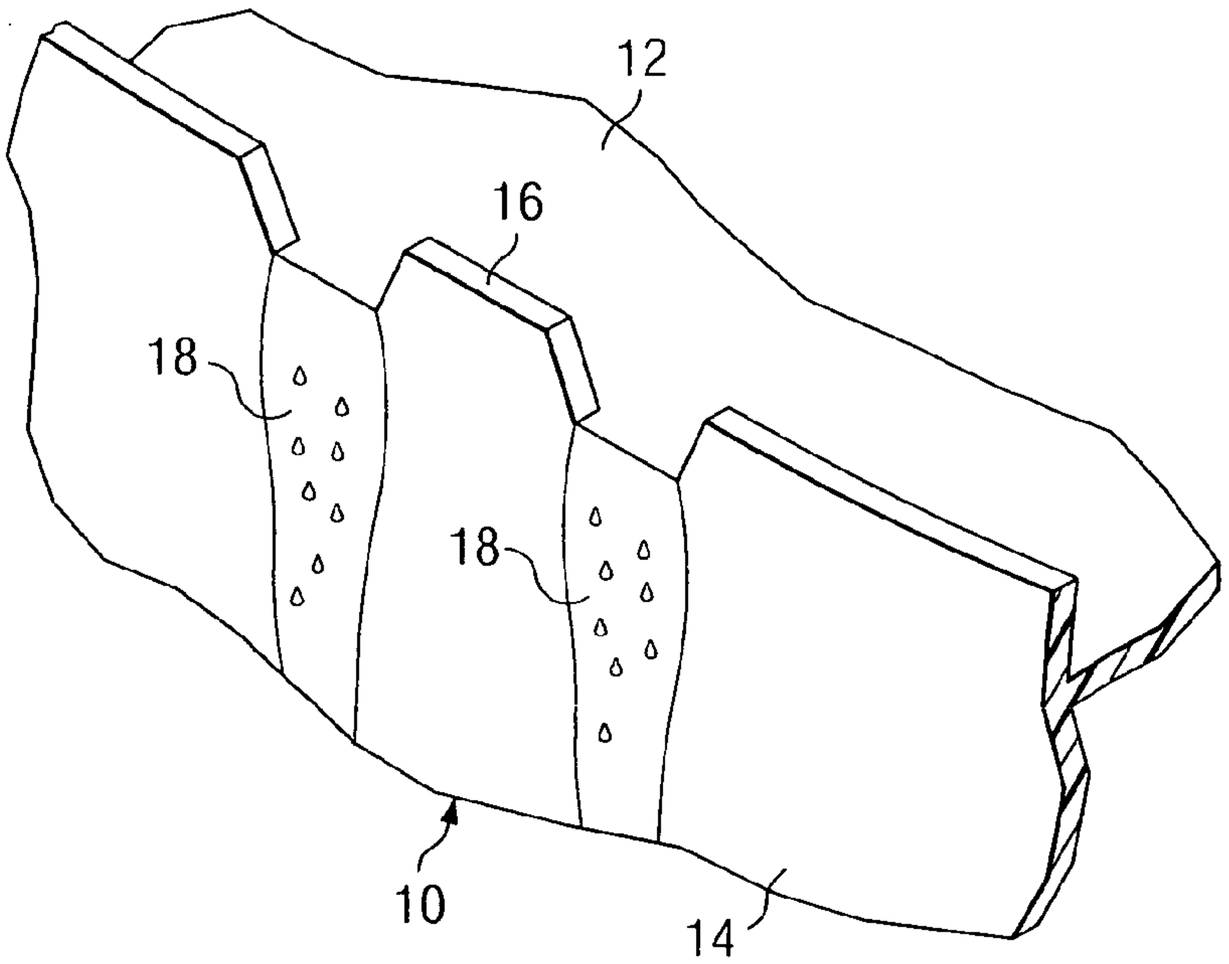


FIG. 1
(PRIOR ART)

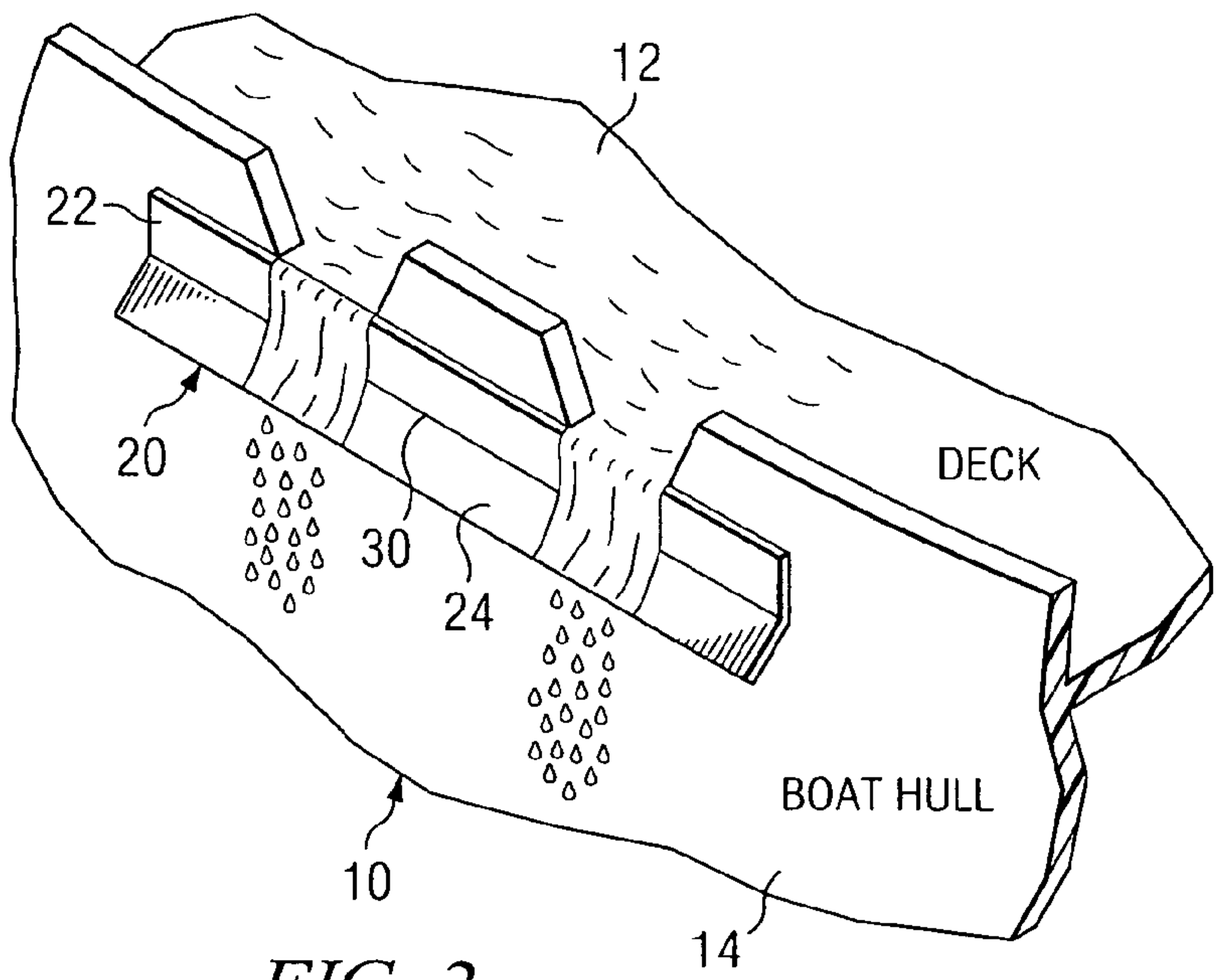


FIG. 2

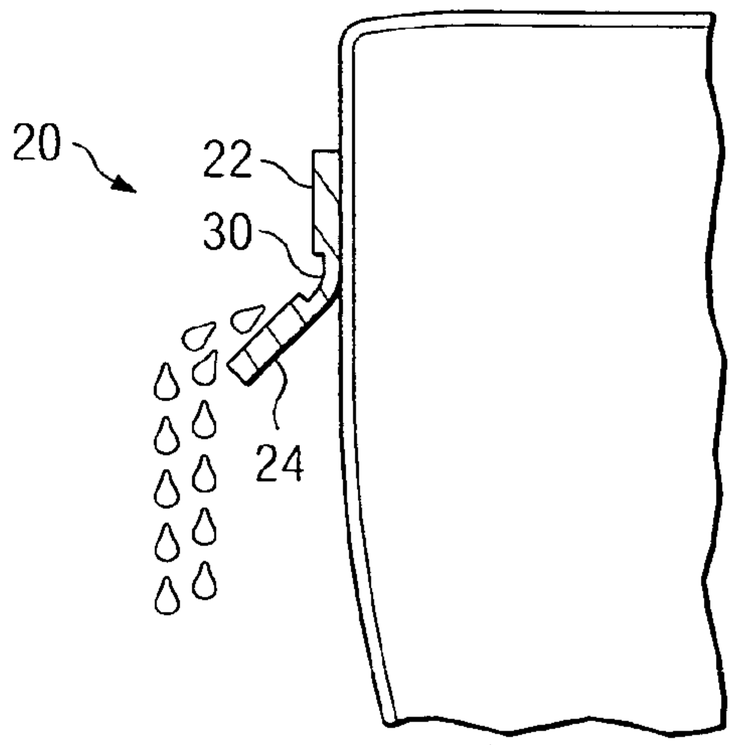


FIG. 3

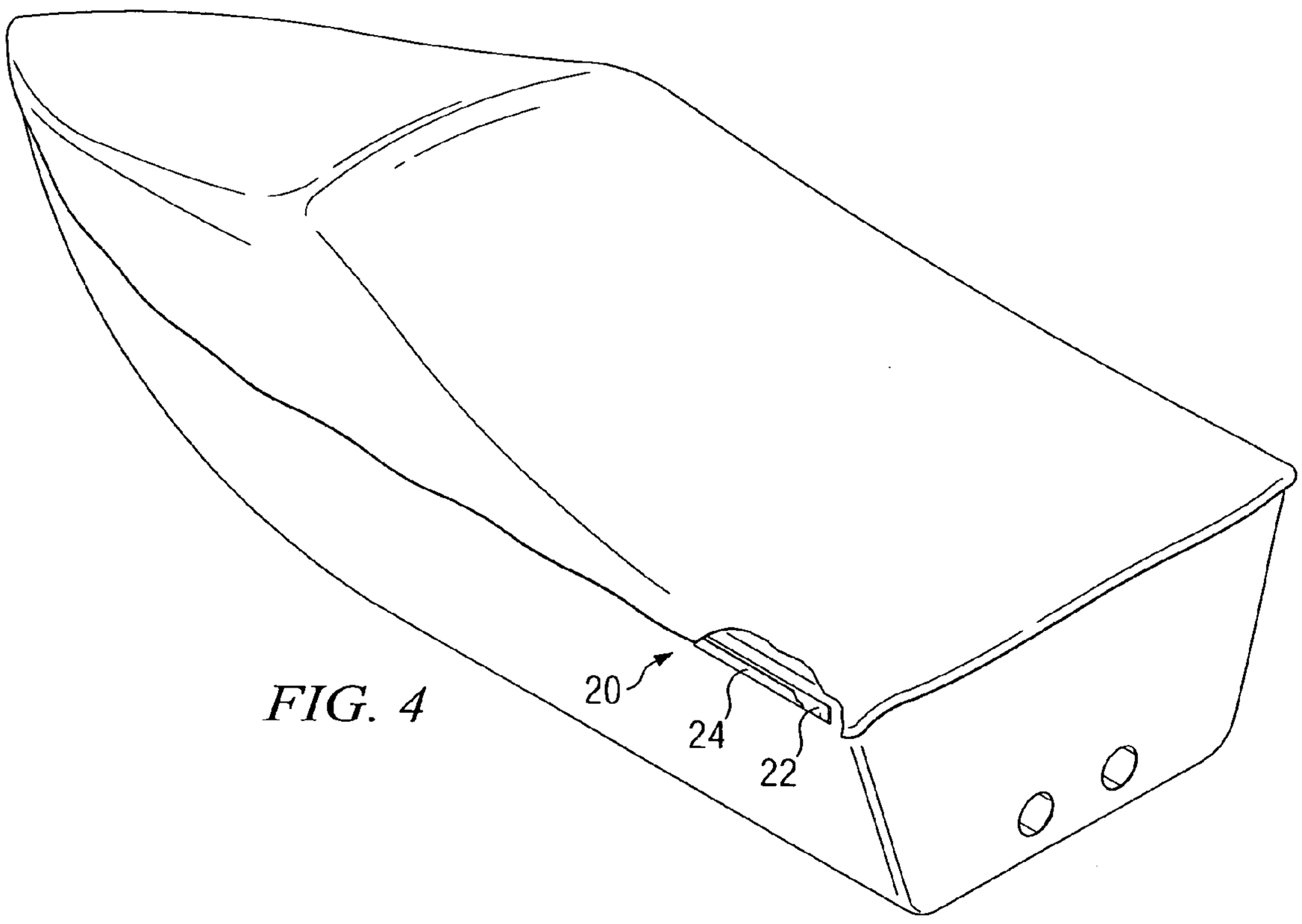


FIG. 4

METHODS AND APPARATUS TO REDUCE FORMATION OF STREAKS ON A WALL

FIELD OF THE DISCLOSURE

This disclosure relates generally to streak and/or stain prevention, and, more particularly, to methods and apparatus to reduce formation of streaks from fluid running down a side surface of boat hull.

BACKGROUND

Many structures are subjected to rain water runoff and the like. Such run-off often causes streaking and staining which gives these structures a dirty, displeasing appearance. For example, boats frequently exhibit dark streaks along their hulls as a result of water running off of their decks. FIG. **1** illustrates this problem in further detail.

Turning to FIG. **1**, a structure **10** (which may be, for example, a boat, a recreational vehicle, a recreational trailer or a building) includes an upper, drainage surface **12** and a plurality of walls **14**. The drainage surface **12** may be generally horizontal (e.g., like a boat deck) or pitched (e.g., like a roof of a house). The walls **14** are generally positioned in a substantially vertical position, and may be substantially straight (e.g., like a wall of a typical building) or curved (like a hull of a typical boat), and/or may be stationary or mobile. As shown in the example of FIG. **1**, it is often the case that one or more obstructions **16** are located along the edge joining the drainage surface **12** and the wall(s) **14**. Such obstructions may concentrate the flow of the draining fluid in one or more areas of the wall(s) **14**. As a result, dark streaks **18** form along the wall(s) **14**. For example, a perforated toe rail on a boat tends to concentrate drainage through the perforations of the rail. This concentrated drainage creates unsightly streaks **18** along the hull beneath the perforations. Even in the absence of such obstructions (e.g., a non-perforated toe rail) where run-off is more dispersed, streaks still appear. Run-off streaks **18** are particularly visible against a light surface.

Attempts have been made to address this streaking problem in various contexts. For example, chemical cleaners have been made commercially available to remove such streaks **18** from rain gutters on buildings such as residential homes, and from the hulls of boats. In the recreational vehicle context, a recreational vehicle accessory has been marketed on the Internet which is intended to prevent black streaking on a recreational vehicle. The noted recreational accessory is structured to mount in a channel provided for a trim insert and appears to be substantially rigid.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic illustration of an example prior art structure experiencing streaking due to run-off.

FIG. **2** illustrates an example baffle applied to the structure of FIG. **1** to reduce or prevent streaking.

FIG. **3** is a side schematic view of the example baffle of FIG. **2**.

FIG. **4** is a perspective view of an example boat and cover, with a cut away section showing the baffle deflected by the cover.

DETAILED DESCRIPTION

FIG. **2** illustrates an example baffle **20** applied to the structure **10** of FIG. **1** to reduce or prevent streaking due to run-off of fluids. The structure **10** may be an indoor structure or an outdoor structure. In the illustrated example, the baffle **20** is adhered to the wall **14** of the structure **10** immediately adjacent the upper edge of the wall **14** in a generally horizontal orientation. Persons of ordinary skill in the art will appreciate, however, that other positions and/or orientations are likewise appropriate.

As shown in FIG. **2**, the example baffle **20** is a flexible plastic strip that includes a first portion **22** which is secured to the wall **14** of the structure **10** via a pressure adhesive and a second portion **24** depending from the first portion. The second portion **24** is not directly secured to the wall **14**, but is suspended by the first portion **22** at an obtuse angle to the first portion **22**. As a result, water and/or other fluids running off of the drainage surface **12** run down the outer face of the first portion **22** of the baffle **20** and are then diverted along the surface of the second portion **24** of the baffle **20** and away from the wall **14**. Because the run-off fluid is diverted away from the wall **14**, the run-off fluid falls free of the structure **10** without forming streaks on the wall **14** beneath the baffle **20**. As a result, the occurrence of unsightly streaks along the portion of the wall **14** beneath the baffle **20** is reduced or prevented.

An example baffle **20** is shown in greater detail in FIG. **3**. In the example of FIG. **3**, the first portion **22** and the second portion **24** of the baffle **20** have substantially the same size. In particular, each portion **22**, **24** is about 0.5 inches wide and 0.015 inches thick. Preferably, the thickness of at least the portion of the baffle **20** to be adhered to the wall **14** is selected to be quite thin (e.g., on the order of 0.1 inches or less) such that fluid flows substantially uninterrupted from the surface of the wall **14** above the baffle **20** onto the face of the baffle **20** substantially as if the portion **22** and the wall **14** were coplanar. The length of the portions **22**, **24** are preferably identical. However, persons of ordinary skill in the art will appreciate that these dimensions are given by way of examples, and that other dimensions may alternatively be selected. In particular, the dimensions should be selected to suit the desired application.

A chemical adhesive **28** is located on the rear surface of the first portion **22** of the baffle **20**. The chemical adhesive **28** may be covered by a disposable backing such as a plastic or paper strip during transport and prior to application of the baffle **20** to the structure **10** to be serviced. The backing may be peeled away to expose the chemical adhesive **28** when it is desired to mount the baffle **20** to the structure **10** to be protected against streaking.

In the illustrated example, the first and second portions **22**, **24** of the baffle **20** are integrally formed (e.g., molded or otherwise formed) at a predetermined obtuse angle. For example, the baffle **20** may be implemented using sheet stock. In an alternative embodiment, the first and second portions **22**, **24** are joined by a living hinge **30**. Integrally forming the first and second portions is presently preferred to the living hinge approach because the formed approach is believed to exhibit longer lasting resilience than the living hinge, while still remaining flexible. If the living hinge approach is followed, over time the living hinge **30** may lose its resiliency. If this occurs, the desired shape may be restored by hand.

Seamlessly joining the first and second portions **22**, **24** (e.g., by molding them together) is preferred because the seamless joint prevents leakage between the first and second portions **22**, **24** and because it permits the second portion **24** to flex relative to the first portion upon impact with other structures without breaking. In particular, in many applications, (e.g., in the boating context where the baffle **20** is

applied to the exterior of a boat hull beneath, for example, a toe rail), the baffle **20** is positioned in places where it is likely to be impacted by other structures. For example, in the boat example, the baffle **20** may periodically strike against a dock, the hull of another boat, or even be compressed between the hull and a cover/tarp drawn around the hull and over the deck of the boat (See FIG. **4**). Because of these possible impacts, it is desirable that the baffle **20** be resiliently flexible such that it will bend or otherwise deform without breaking (e.g., the first and/or second portions **22**, **24** will move relative to one another such that the angle therebetween temporarily increases or decreases) when subjected to an impacting force, and such that the baffle **20** will return to a shape wherein the second portion **24** is disposed at an obtuse angle relative to the first portion **22** to deflect run-off away from the hull (as shown, for example, in FIG. **2**) when the impacting force is removed.

In an example, the baffle **20** is implemented by the self-adhesive, V-shaped weather-stripping tape such as that sold by M-D Building Products, Inc. of Oklahoma City, Okla. under the product name "V-Flex Weather-Stripping," or by the self-adhesive, V-shaped, polypropylene weather-strip sold by Ace Hardware of Oak Brook, Ill. In such products, a plastic tape is creased or scored along its middle to form two generally equal portions **22**, **24** joined by a living hinge **30**. The living hinge **30** may be folded to position the second portion **24** at an obtuse angle relative to the first portion **22** and vice versa as shown, for example, in FIG. **3**. One of the portions **22** is coated with a chemical adhesive covered by a removable, paper or plastic backing. These products may be repurposed to form the baffle **20** described above thereby providing a solution to the streaking problem noted above.

The above-described baffle **20** and variants thereof may be employed by (1) cleaning the surface **14** to be serviced by the baffle **20**, (2) cutting the baffle **20** to one or more lengths corresponding to the area(s) to be protected from streaking, and then, (3) for each such area, (a) folding the baffle **20** such that the second portion **24** of the baffle is positioned at an obtuse angle to the first portion **22** (of course, in the case of a baffle **20** formed with the first and second portions **22** positioned at a predetermined obtuse angle, the folding process is unnecessary), (b) removing the backing from the first portion **22** of the baffle to expose the chemical adhesive **28**, and (c) adhering the first portion of the baffle **20** to the wall **14** to be serviced by pressing the adhesive **28** against the wall **14** in the desired location and orientation such that fluid running down the wall **14** (e.g., from the drainage area **12**) will be deflected away from the wall **14** by the baffle **20**. Typically, it is desirable to position the baffle **20** in a generally horizontal orientation adjacent the upper edge of the wall **14** to be protected against streaking from fluid running down the wall to ensure fluid such as rain water is deflected away from the wall as high on the wall as possible and to reduce the incidence of fluid running along the length of the baffle **20**.

The above disclosed methods and apparatus may be applied in many contexts to reduce or prevent the formation of streaks due to run-off and the like. For example, in boating, precipitation from splash and/or from rain and/or heavy dew often collects on the deck and other top surfaces of a boat. This water typically runs off the upper surfaces of the boat by passing under or through a toe rail. In the case of a perforated toe rail, the run-off water is concentrated to pass through the perforations and, thus, streaks form beneath the perforations along the sides of the hull. In the case of a non-perforated toe rail, the water is more dispersed, but streaks still form. As mentioned above, boat owners frequently use marine chemicals to remove these streaks. However, the need for such cleaning can be reduced or eliminated by mounting the baffle **20** on the hull beneath and adjacent the toe rail (e.g., along the entire length of the hull or at least under any perforations formed in the toe rail and/or any scuppers/drains) to deflect run-off away from the hull. Of course, one baffle **20** may be used or multiple baffles **20** may be used to service a wall **14**.

In another example application, the above disclosed methods and apparatus may be applied to a recreational vehicle or trailer. In such contexts, the baffle **20** may be mounted to the topmost edges of the sides of the recreational trailer or vehicle to deflect run-off from the top of the vehicle/trailer away from the sides of the same.

In another context, the above disclosed methods and apparatus may be applied to reduce or prevent streaks from forming along rain gutters due to overflow or the like. For example, the outer horizontal flange of a rain gutter often collects rain water which runs down the curved outside face of the gutter, thereby creating streaks. When applied along the upper outside edge of the gutter, the baffle **20** will deflect the water away from the curved outer face of the gutter thereby preventing or reducing streaks.

In still another example application, the above disclosed methods and apparatus may be applied to reduce or prevent streaks from forming on signs. For example, the baffle **20** may be mounted along the upper edge of the front face of a road sign (e.g., a stop sign) or advertisement (e.g., a billboard) to deflect rain water and the like away from the sign to thereby reduce streaking.

In yet another application, the above disclosed methods and apparatus may be applied to reduce or prevent chemical surface finishes such as paint, stain or varnish from streaking down the side of a surface during or after application of the same. For instance, a painter might wish to apply the baffle **20** to a wall to be painted such that paint applied above the baffle is deflected away from the wall (e.g., onto drop clothes below) by the baffle rather then streaking down the wall.

In another application, the baffle **20** may be mounted upside down relative to the position shown in FIG. **2**, such that fluid running down a wall **14** is captured and directed by an acute-angle channel formed between the wall **14** and the back of the second portion **24**.

In applications where the baffle **20** is intended for permanent placement, its color is preferably selected to blend into the wall **14** it protects. For example, a white baffle **20** may be used with the white hull of a boat. Alternatively, the baffle **20** may be colorless or clear. For example, the baffle **20** may be formed of transparent plastic that is ultra-violet (UV) protected against discoloration.

Although certain example methods and apparatus have been described herein, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all methods, apparatus and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

What is claimed is:

1. A method to reduce formation of streaks caused by fluid running down a surface of a boat hull, comprising:

adhering a first portion of a flexible strip to a side surface of a boat hull; and

employing a second portion of the flexible strip to deflect fluid running down a portion of the surface located above the flexible strip away from the surface, wherein the second portion is disposed at an obtuse angle relative to the portion of the surface located above the

flexible strip, wherein the first portion and the second portion of the flexible strip are joined by a living hinge, and wherein the living hinge has a thickness that is substantially less than the respective thickness of the first portion and the second portion of the flexible strip.

2. The method defined in claim **1** wherein adhering the first portion of the flexible strip to the surface comprises removing a backing material to expose a chemical adhesive on the first portion of the strip.

3. The method defined in claim **1** wherein adhering the first portion of the flexible strip to the surface comprises positioning the flexible strip in a generally horizontal position.

4. The method defined in claim **1** wherein the first portion and the second portion of the flexible strip are integrally formed at an obtuse angle.

5. The method defined in claim **1** wherein the flexible strip comprises weather-stripping tape.

6. The method defined in claim **1** wherein adhering the first portion of the flexible strip to the surface comprises adhering the first portion along substantially an upper edge of the surface.

7. The method defined in claim **1** wherein a color of the flexible strip is selected to substantially match a color of the surface.

* * * * *